

## CLAIMS

5        1.     A method for determining the presence or absence of an antibiotic in a fluid comprising:

- (a) contacting a fluid sample with a test medium comprising a test microorganism and at least one indicator;
- (b) incubating the test microorganism with the fluid under conditions whereby growth of the test microorganism occurs if no antibiotic is present in the fluid sample; and
- (c) detecting any growth or inhibition of growth of the test microorganism as appropriate by means of an indicator,

10      characterized in that the ratio of the volume of said fluid sample to the volume of test medium exceeds 0.68:1.

15      2.     A method according to claim 1, wherein the antibiotic to be determined is a  $\beta$ -lactam antibiotic.

20      3.     A method according to claim 1 or 2, wherein the test medium is a sol or a gel.

25      4.     A method according to any one of claims 1 to 3, wherein the indicator is at least one pH-indicator and/or at least one redox-indicator.

30      5.     A method according to any one of claims 1 to 4, wherein the test microorganism is a thermo-stable microorganism.

6.     A method according to any one of claims 1 to 5, wherein in the fluid sample comprises a fluid obtainable from an animal or human body.

7.     A method according to claim 6, wherein the fluid is milk.

8.     A method according to any one of claims 1 to 7, wherein the conditions for growth of the test micro-organism comprise:

- (a) adding nutrients; and/or
- (b) incubating at an appropriate temperature; and/or
- (c) incubating for a sufficient period of time.

5        9.      A method according to any one of claims 1 to 8, wherein the ratio of the volume of liquid sample to the volume of test medium exceeds 20:27 (0.74:1) (v/v),  
25:27 (0.93:1) (v/v) or 2:1 (v/v).

10     10.     A method according to any one of claims 1 to 9, wherein the volume of liquid sample is greater than the volume of test medium.

11.     A kit suitable for determining the presence or absence of an antibiotic in a fluid comprising:

- (a) at least one container partially filled with a test medium comprising a test microorganism, at least one gelling agent and at least one indicator, and;
- (b) a device for adding fluid to the test medium, said device having a volume that exceeds a ratio of 2/3 (0.68:1) of the volume of the test medium.

12.     A kit according to claim 11 further comprising nutrients suitable for allowing the  
20     microorganism to grow.

13.     A kit according to claim 11 or 12, further comprising a thermostatic device, with the aid of which test samples can be kept at a pre-set temperature.

25     14.     A kit according to any one of claims 11 to 13, further comprising a data carrier loaded with a computer program suitable for instructing a computer to analyze digital data obtained from a sample-reading device.

30     15.     Use of a ratio of a volume of fluid sample to a volume of test medium between 2:3 (0.68:1) (v/v) and 10:1 (v/v) in an assay for the detection of an antibiotic.

16.     Use of a ratio of a volume of fluid sample to a volume of test medium between 2:3 (0.68:1) (v/v) and 10:1 (v/v) to improve the sensitivity of a test microorganism to  $\beta$ -lactams.